amendment obviates the rejection of claim 1 under 35 U.S.C. § 102(b) in view of Gannon *et al.* in the Office Action dated March 27, 1997 (Paper No. 11).

Claims 1 and 2 have been amended to specify a substance as originally specified in the claims prior to the amendment filed on September 29, 1997. No new matter has been added.

New claim 46 has been added to claim an assay for identifying a substance that inhibits the interaction of a virus protein with a host cell protein which transports said viral protein. Support for this new claim can be found in the specification at page 10, line 13. New dependent claim 47 has been added to recite the assay wherein the viral protein interacts with another viral component. Support for this new claim can be found in the specification at page 11, line 21.

New claims 48-56 have been added to claim an assay in which the viral protein is derived from paramyxoviruses such as parainfluenza viruses, measles viruses, respiratory syncytial virus, bunyaviruses, arena viruses, orthomyxovirus-like viruses, human immunodeficiency viruses, herpes viruses, or adenoviruses. Support for these new claims can be found, *inter alia*, in the specification at page 10, lines 6-22.

Claims 4-10 have been withdrawn from consideration as being directed to a non-elected species. Applicants reserve their right to prosecute claims 4-10 directed to a non-elected invention in this or a continuing application.

Claims 1-3 and 11-17 are under active consideration in the above-identified application. Based upon the above amendments and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

I. Acknowledgment of Supplemental Information Disclosure Statement

Applicants wish to remind the Examiner that a Supplemental Information Disclosure Statement under 37 C.F.R. §§ 1.56 and 1.97(c) was filed on September 28, 1999. Applicants respectfully request consideration of the references contained therein and indication of that consideration by initializing the PTO form submitted September 28, 1999.

II. Withdrawal of Prior Rejections

Applicants respectfully acknowledge the Examiner's withdrawal of the previous rejections of claims 1-3 and 11-17 under 35 U.S.C. § 112, first and second paragraphs.

III. Rejection of Claims 1-3, and 11-17 Under 35 U.S.C. § 112, second paragraph

At page 3, item 7, of Paper No. 18, the Examiner maintains the rejection of claims 1-3 and 11-17 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this ground of rejection.

Nevertheless, without acquiescing in the propriety of the rejection, and solely to advance prosecution, Applicants have amended independent claims 1 and 2 so as to delete the phrase "peptide or small organic compound" and substitute therewith "substance". Accordingly, Applicants believe that this ground of rejection has been rendered moot, and withdrawal thereof is respectfully requested.

IV. Rejection Under 35 U.S.C. § 102(b)

At page 5, item 8, of Paper No. 18, the Examiner maintains the rejection of claim 1 under 35 U.S.C. §102(b) as allegedly being anticipated by Barik *et al.* (AD)("Barik"). The rationale for the Examiner's rejection is set forth on page 5 of Paper No. 18. In short, the Examiner contends that:

> ... Applicant argues that the claim specifies the detection of complex formation between two proteins while Barik *et al.* does not describe or suggest detecting complex formation.
>
> Contrary to Applicants' assertion, the Examiner notes that Barik *et al.* (AD) do teach the detection of the phosphorylation of vesicular stomatis virus (VSV) phosphoprotein P by the host cell protein casein kinase II, which is detection of complex formation beeause phosphorylation cannot occur without complex formation. Since the scope of claim 1 encompasses the detection of eomplexes by detection of the result(s) of such complexes, Barik *et al.*(AD) anticipate the claim.

Paper No. 18, at page 5.

For the reasons outlined below, Applicants respectfully traverse this ground of rejection.

The Examiner is respectfully reminded of the standard for anticipation under 35 U.S.C. § 102. For a prior art reference to anticipate under 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference (*In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990)).

Applieants respectfully submit that the alleged teachings of Barik to which the Examiner refers relate merely to the inhibition of enzyme activity, and detection of the product of the enzymatic reaction. In contrast to this alleged teaching, claim 1 speeifies deteeting the formation and inhibition of a complex betw een two protein fragment binding partners. Barik does not deseribe or otherwise suggest detecting the formation of a complex between the proteins deseribed therein, mueh less detecting the inhibition of sueh complex formation as

specified in claim 1. Specifically, Applicants respectfully submit that Barik simply does not disclose on its face detection of the complex allegedly formed between vesicular stomatitis virus P protein and cellular casein kinase II. Barik merely discloses the detection of the enzymatic phosphorylation of vesicular stomatitis virus P protein by the cellular casein kinase II and the inhibition of that enzymatic reaction by heparin.

Thus, contrary to the Examiner's contention, the alleged teachings of Barik are not within the scope of claim 1, nor would it be obvious to use the proteins described in Barik in the assay claimed in claim 1. Accordingly, Barik neither anticipates, nor makes obvious, the assay of claim 1. Therefore, Applicants respectfully request that the rejection of claim 1 under § 102(b) be withdrawn.

V. Rejection Under 35 U.S.C. § 102(e)

At page 6, item 9, of Paper No. 18, the Examiner rejects claims 1 and 11-17 under 35 U.S.C. § 102(e) as allegedly being anticipated by Miles *et al.* ("Miles"). The rationale for the Examiner's rejection is set forth on page 6 of Paper No. 18. In short, the Examiner contends that:

> Miles *et al.* teach screening assays to identify antiviral agents that inhibit the interferenee of p68 kinase by viral non-nucleic aeid maeromoleeules (see column 5, line 33 to column 6, line 6). They further teach the detection of complex formation between the viral maeromoleeule and a host protein kinase as well as the immobilization of the kinase on a solid support (see column 6, lines 37-56). They also teach the use of a labeled partner in the complex formation assays as well as the use of antibodies to attach a partner to the solid phase, the use of antibodies to capture a partner from solution, and the separation of the product complex from solution (see column 19, line 37 to column 24, line 20). Paper No. 18, at page 6.

Applicants respeetfully traverse this ground of rejection.

Applicants respectfully submit that, in the Miles passage cited by the Examiner, the virus produces a viral inhibitor which interferes with the activation of a host-cell interferon-induced, double-stranded RNA-activated protein kinase (p68 kinase). Miles states that:

> The protein known as p68 protein kinase is an interferon-induced double-stranded RNA-activated protein kinase. This kinase is activated by the double-stranded RNA typically found in virus-infected cells. Once activated, the kinase phosphorylates the alpha subunit of the initiation factor eIF-2, an event which quickly leads to a block in the initiation stage of translation. The effect is to shut down protein synthesis in the cell, causing that cell to die: something which the multicellular organism can afford but which the virus cannot. To ensure continued translation in infected cells, different viruses have evolved a variety of mechanisms to prevent or counteract activation of the p68 kinase (reviewed in Katze, 1992).

(Miles at column 12, lines 12-24)

Applicants submit that the viral proteins which overcome the host cell interferon-induced, double-stranded RNA-activated p68 protein kinase defense mechanism disclosed in Miles are not required for viral infection, replication, assembly or release as specified in claim 1. For example, by way of illustration only, Applicants respectfully submit that the vaccinia virus pseudosubstrate disclosed at column 12, lines 36-38 of the Miles patent refers to the vaccinia virus K3L protein reported by Beattie *et al.* (Beattie *et al.*, Virology 183, 419-422, 1991, a copy of which is submitted herewith as Exhibit A). Beattie *et al.* notes that the K3L gene product may impart interferon resistance by binding competitively to the P1 kinase to block cellular eIF-2α phosphorylation (Beattie *et al.*, Virology 183, 419-422, 1991). Beattie further notes that "[I]n the absence of IFN both wild-type and deletion mutant virus gave similar yields (Fig. 4), consistent with the K3L gene product being non-essential for viral replication in tissue culture." (Emphasis added) Therefore, Beattie *et al.* clearly demonstrates that the K3L pseudosubstrate is not required for viral infection, replication, assembly or release as specified in claim 1.

Accordingly, in view of the above arguments, the Miles does not disclose the invention as presently claimed in amended claim 1. Thus, Miles does not anticipate claims 1 and 11-17 under 35 U.S.C. § 102(e). Withdrawal of this rejection is respectfully requested.

Conclusion

Applicants believe that each and every substantive ground for rejection or objection has been successfully overcome or obviated and that the claims are in condition for allowance. Withdrawal of all of the rejections and objections and allowance of the application is earnestly requested. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (202) 496-4454 to discuss the same.

Respectfully submitted,

Date: [illegible]

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